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Blossoming future

"MLU"
Magnetic Logic Unit Architecture

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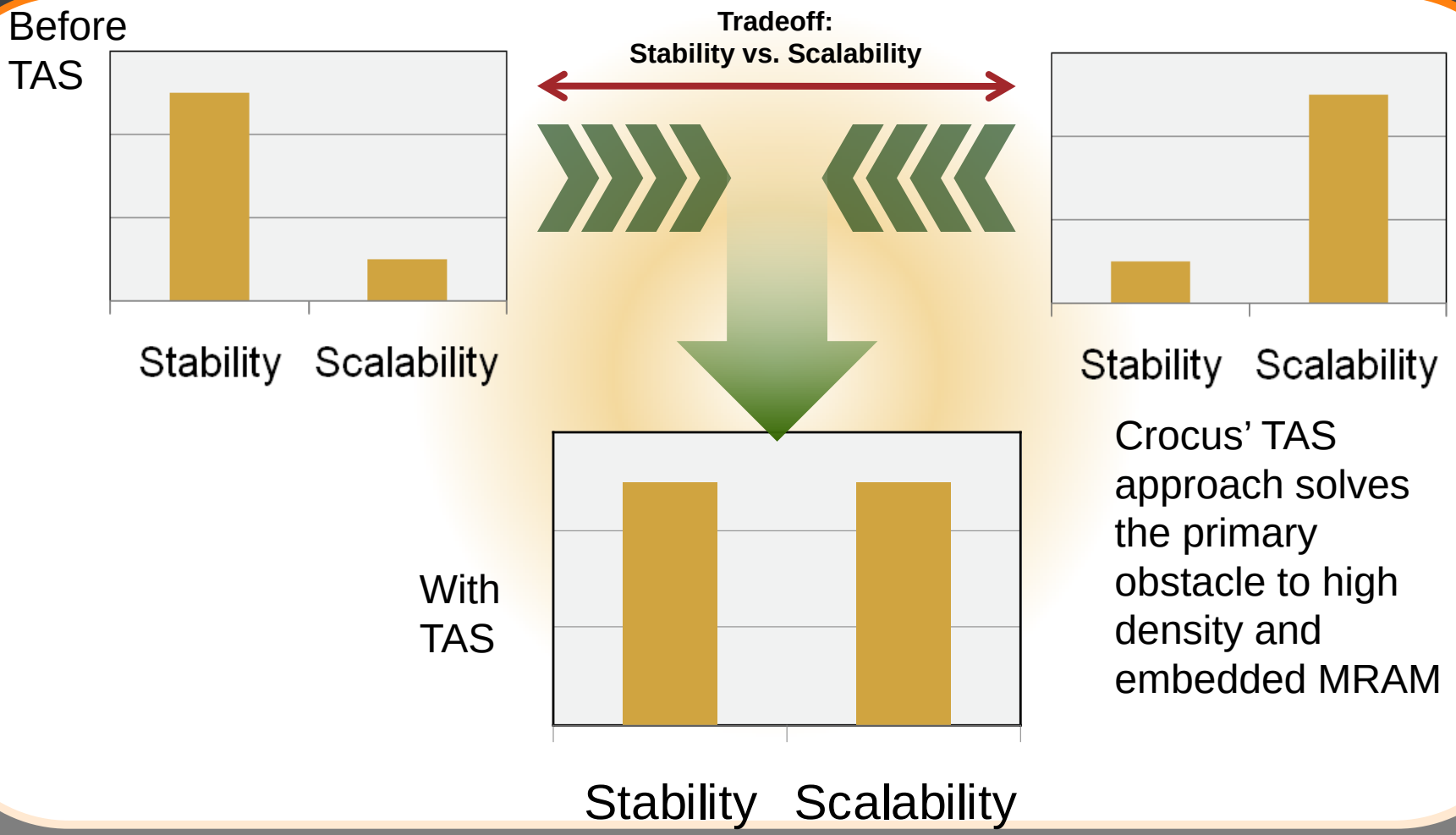
August 2011

Thermally Assisted Switching (TAS)

The Heart of MLU



Crocus' TAS approach solves the primary obstacle to high density and embedded MRAM

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Progression to MLU

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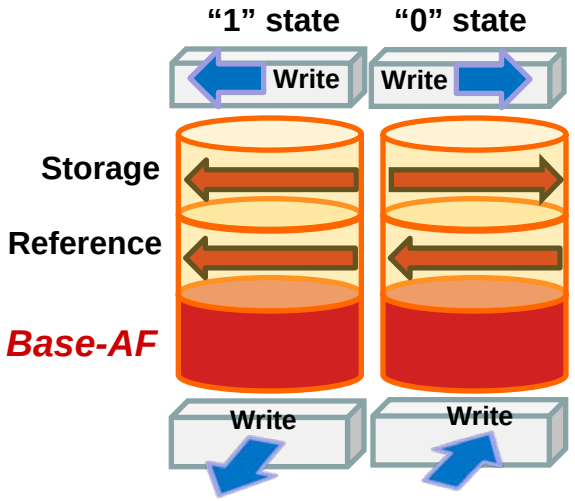
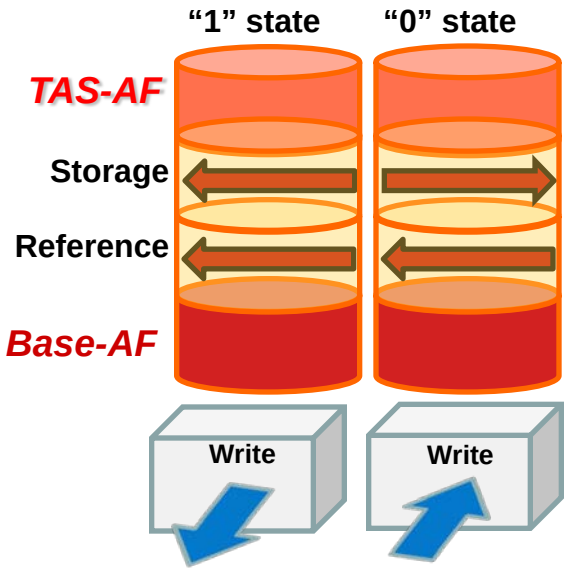
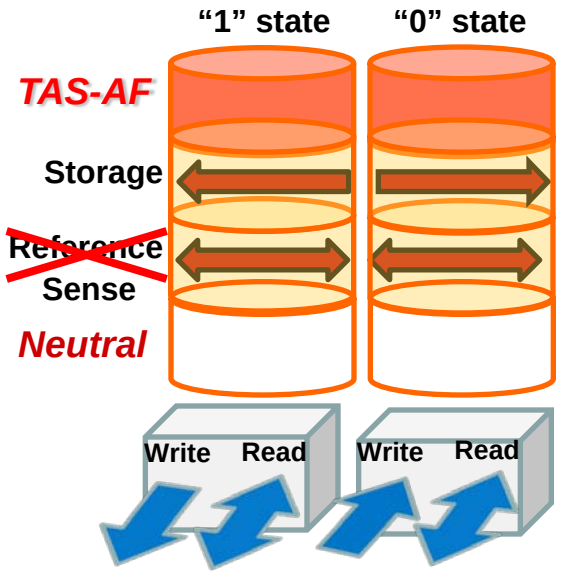
STD MRAM



TAS MRAM



MLU



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MLU Benefits

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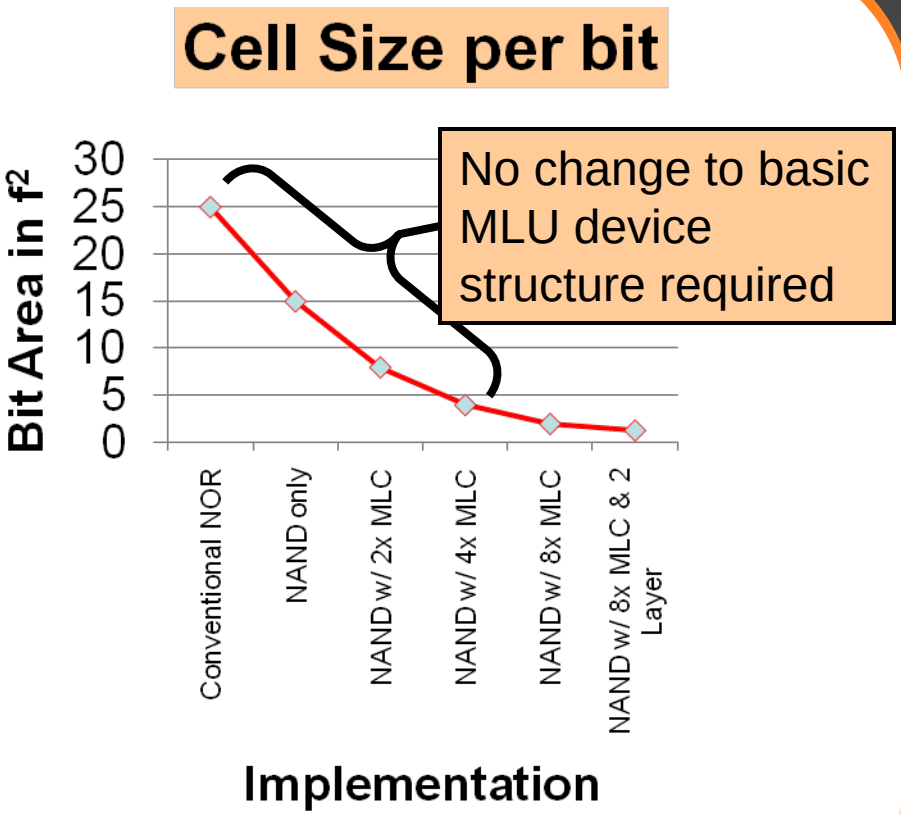
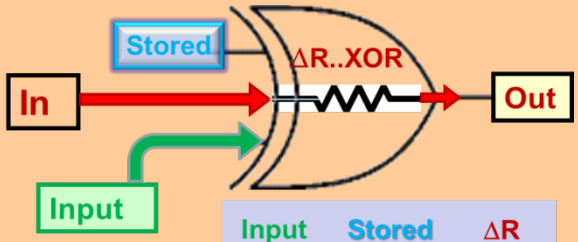
MLU Impact on Memory Density

TAS Architecture	Bit Density
Conventional NOR	~25 f^2
NAND	1.5-3x density
MLC	2-8 bits/cell
Multi-layer	2+ layers



MLU Impact on Logic Implementation

MLU implements 'native XOR'



Input	Stored	ΔR
0	0	High
0	1	Low
1	0	Low
1	1	High

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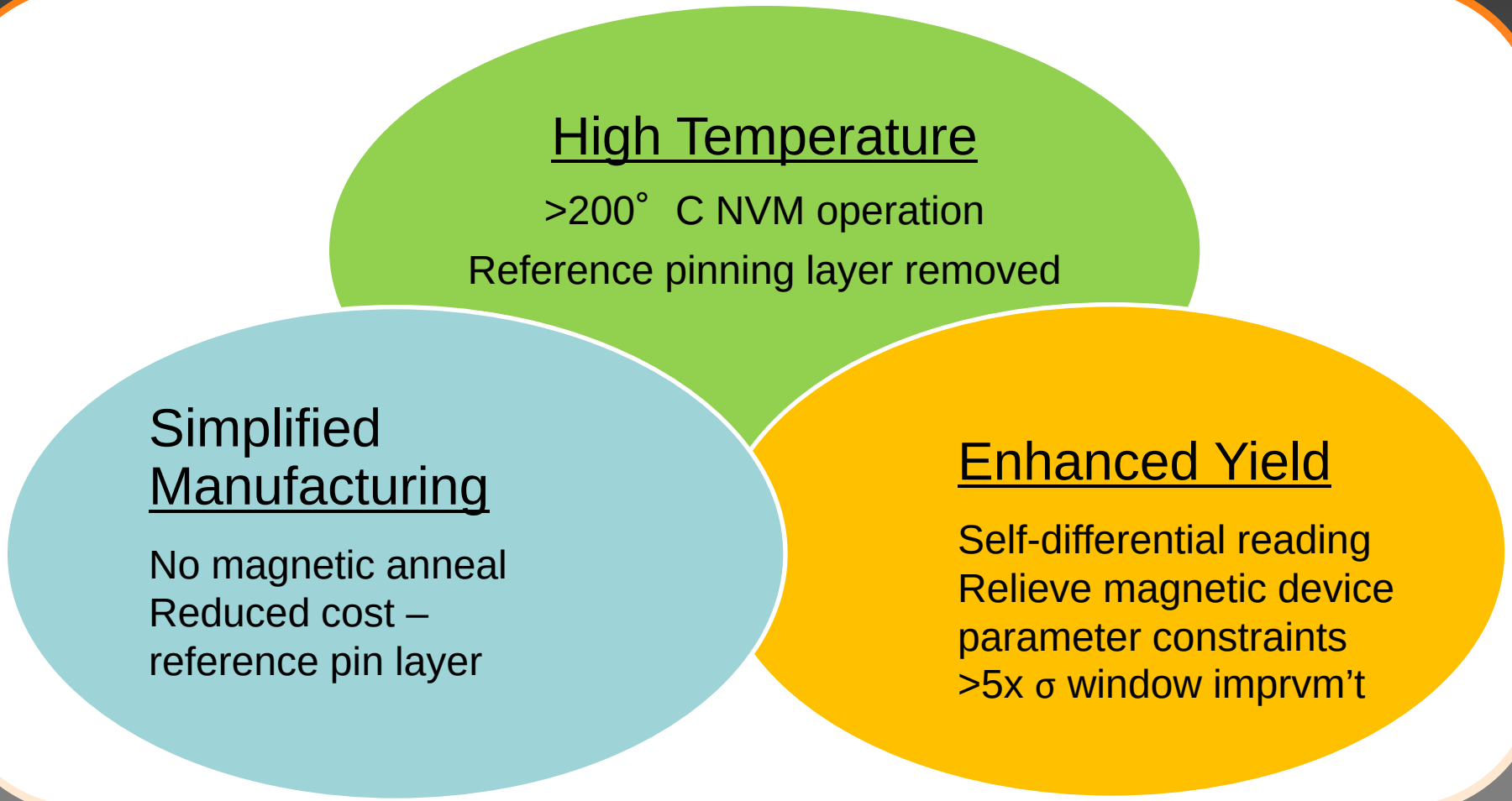
MLU Impact on Device Operation and Manufacturing



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MLU Summary

- MLU:
  - Makes very high density MRAM possible
    - NAND and MLC are straightforward
  - Opens new logic applications for magnetic memory
    - CAM, Secure Memory, Pattern Matching, Look-up Table
  - Removes previous technology barriers
    - High temp NVM operation, greatly expanded yield window, lower cost wafer processing